

Chapter 2: Structure and Function of Cells, Tissues, and Organs

Test Bank

MULTIPLE CHOICE

1. Simple squamous epithelium functions as a lining in which location?
 - a. Mouth
 - b. Vagina
 - c. Kidney
 - d. Pharynx

ANS: C

	Feedback
A	The mouth is lined with stratified squamous epithelium.
B	The vagina is lined with stratified squamous epithelium.
C	Correct. The kidney is lined with simple squamous epithelium.
D	The pharynx is lined with stratified squamous epithelium.

REF: Table 2.1, page 20

OBJ: 1

2. Which cell supports the nervous system?
 - a. Myoblast
 - b. Neuroglia
 - c. Leukocyte
 - d. Melanocyte

ANS: B

	Feedback
A	Neuroglial cells, not myoblasts, support the nervous system.
B	Correct. Liver tissue is produced by endodermal cells.
C	Neuroglial cells, not leukocytes, support the nervous system.
D	Neuroglial cells, not melanocytes, support the nervous system.

REF: Neural Tissue, page 20

OBJ: 1

3. Connective tissue is classified as _____.
 - a. dense, striated, or smooth
 - b. simple, stratified, or squamous
 - c. dense, loose, or loose with special properties
 - d. dense, elastic, or elastic with special properties

ANS: C

	Feedback
A	Connective tissue is classified as dense, loose, or loose with special properties.
B	Connective tissue is classified as dense, loose, or loose with special properties.
C	Correct. Connective tissue is loose, dense, or loose with special properties.
D	Connective tissue is classified as dense, loose, or loose with special properties.

REF: Connective Tissue, page 22

OBJ: 1

4. What are the three types of muscle tissue?
- Cardiac, skeletal, smooth
 - Striated, voluntary, smooth
 - Cardiac, skeletal, voluntary
 - Voluntary, involuntary, striated

ANS: A

	Feedback
A	Correct. There are three types of muscle tissue—cardiac, skeletal, and smooth.
B	Muscle tissue is classified as cardiac, skeletal, or smooth.
C	Muscle tissue is classified as cardiac, skeletal, or smooth.
D	Muscle tissue is classified as cardiac, skeletal, or smooth.

REF: Muscle Tissue, page 24

OBJ: 1

5. How does epithelial tissue renew itself?
- Mitosis of the basal cells
 - Mitosis of the granular layer of cells
 - By shedding or sloughing the surface cells
 - Through nourishment of nearby blood vessels

ANS: A

	Feedback
A	Correct. Epithelium regenerates through mitosis of the basal cells.
B	Epithelial cells regenerate through basal cell mitosis.
C	Epithelial cells regenerate through basal cell mitosis.
D	Epithelial cells regenerate through basal cell mitosis.

REF: Epithelial Tissue, page 19

OBJ: 1

6. Buccal mucosa renews itself in ____ days.
- 1 to 2
 - 3 to 4
 - 5 to 9
 - 10 to 14

ANS: D

	Feedback
A	Buccal mucosa is replenished every 10 to 14 days, as opposed to 1 to 2 days.
B	Buccal mucosa is replenished every 10 to 14 days, as opposed to 3 to 4 days.
C	Buccal mucosa is replenished every 10 to 14 days, as opposed to 5 to 9 days.
D	Correct. Buccal mucosa is replenished every 10 to 14 days.

REF: Epithelial Tissue, page 19

OBJ: 1

7. The junctional epithelium of gingiva is replenished every ____ days.
- 1 to 3
 - 4 to 6
 - 7 to 9
 - 10 to 13

ANS: B

	Feedback
A	Junctional epithelium renews every 4 to 6 days, rather than 1 to 3 days.
B	Correct. The junctional epithelium of the gingiva is renewed every 4 to 6 days.
C	Junctional epithelium renews every 4 to 6 days, rather than 7 to 9 days.
D	Junctional epithelium renews every 4 to 6 days, rather than 10 to 13 days.

REF: Epithelial Tissue, page 19

OBJ: 1

8. Which term represents a single layer of cells?
- Simple
 - Stratified
 - Cuboidal
 - Columnar

ANS: A

	Feedback
A	Correct. The term <i>simple</i> describes a single layer of cells.
B	The term <i>stratified</i> describes several layers of cells.
C	The term <i>cuboidal</i> describes a cube-shaped cell.
D	The term <i>columnar</i> describes a column-shaped cell.

REF: Epithelial Tissue, page 19

OBJ: 2

9. Which epithelium consists of several layers, with only the basal cell layer in contact with the basal lamina?
- Simple
 - Stratified
 - Squamous
 - Pseudostratified

ANS: B

	Feedback
A	Simple epithelium has only one layer of cells.
B	Correct. Stratified epithelium consists of several layers, but only the basal cell layer is in contact with the basal lamina.
C	Squamous epithelial cells are characterized as flat, scale-shaped cells.
D	Pseudostratified epithelial cells contact the basal lamina, but not the surface.

REF: Epithelial Tissue, page 19

OBJ: 1

10. All body sensations are relayed to the _____ and the _____.

- a. brain, spinal cord
- b. afferent, efferent systems
- c. voluntary, involuntary muscles
- d. sympathetic, parasympathetic divisions

ANS: A

	Feedback
A	Correct. Sensations received anywhere in the body are relayed to the brain and the spinal cord.
B	The brain and spinal cord relay all sensations transmitted within the body.
C	The brain and spinal cord relay all sensations transmitted within the body.
D	The brain and spinal cord relay all sensations transmitted within the body.

REF: Neural System, page 29

OBJ: 2

11. Impulses conducted from the periphery of the body (e.g., muscles, glands) to the central nervous system (CNS) are conducted through which system?
- a. Motor
 - b. Somatic
 - c. Afferent
 - d. Autonomic

ANS: C

	Feedback
A	Nerve impulses conducted from the periphery to the CNS travel via afferent, not motor, neurons.
B	Nerve impulses conducted from the periphery to the CNS travel via afferent, not somatic, pathways.
C	Correct. The afferent (or sensory) system conducts neural impulses from the periphery to the CNS.
D	Nerve impulses conducted from the periphery to the CNS travel thorough afferent, not autonomic, pathways.

REF: Neural System, page 29

OBJ: 2

12. Impulses pass from the CNS to involuntary muscles via the _____ system.
- a. sensory
 - b. afferent
 - c. somatic
 - d. autonomic

ANS: D

	Feedback
A	Afferent (sensory) nerve processes carry impulses from the peripheral muscles to the CNS.
B	Afferent (sensory) nerve processes carry impulses from the peripheral muscles to the CNS.
C	Somatic pathways relay neural impulses to voluntary muscles.

D	Correct. Autonomic pathways relay neural impulses to involuntary muscles.
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REF: Neural System, page 29

OBJ: 3

13. Which body system relies on neural stimuli to function?
- Vascular
 - Digestive
 - Endocrine
 - Respiratory

ANS: C

	Feedback
A	The endocrine, not vascular, system depends on neural stimuli to function.
B	The endocrine, not digestive, system depends on neural stimuli to function.
C	Correct. The endocrine system depends heavily on neural stimuli to function.
D	The endocrine, not respiratory, system depends on neural stimuli to function.

REF: Neural System, page 29

OBJ: 2

14. The absorption of nutrients occurs in which location?
- Mouth
 - Stomach
 - Small intestine
 - Large intestine

ANS: D

	Feedback
A	Nutrient absorption takes place in the large intestine, not the mouth.
B	Nutrient absorption takes place in the large intestine, not the stomach.
C	Nutrient absorption takes place in the large intestine, not the small intestine.
D	Correct. Nutrient absorption takes place in the large intestine.

REF: Digestive System, page 29

OBJ: 2

15. Internal organs (viscera) receive most of their neural impulses from which nervous system?
- Somatic
 - Sensory
 - Afferent
 - Autonomic

ANS: D

	Feedback
A	Somatic pathways relay neural impulses to voluntary muscles.
B	Afferent (sensory) nerve processes carry impulses from the peripheral muscles to the CNS.
C	Afferent (sensory) nerve processes carry impulses from the peripheral muscles to the CNS.
D	Correct. Internal organs receive most of their neural impulses from the

	autonomic nervous system.
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REF: Neural System, page 29

OBJ: 3

16. Each is part of a neuron, except one. Which is the exception?
- Axon
 - Plasma
 - Dendrite
 - Perikaryon

ANS: B

Feedback	
A	The axon conducts the nerve impulse away from the perikaryon.
B	Correct. Plasma, the fluid part of blood, is not a component of the neuron.
C	The dendrite receives nerve impulses.
D	The perikaryon is the cell body of the neuron.

REF: Neural Tissue, pages 20 - 22

OBJ: 2

17. Which of the following insulates axons located outside the CNS?
- Bone
 - Endomysium
 - Myelin sheath
 - Connective tissue

ANS: C

Feedback	
A	A myelin sheath protects and insulates axons located outside the CNS; bone does not.
B	A myelin sheath protects and insulates axons located outside the CNS; endomysium does not.
C	Correct. A myelin sheath protects and insulates axons located outside the CNS.
D	A myelin sheath protects and insulates axons located outside the CNS; connective tissue does not.

REF: Neural Tissue, page 22

OBJ: 2

18. Neuroglia cells are _____ numerous than neurons.
- slightly less
 - slightly more
 - significantly less
 - significantly more

ANS: D

Feedback	
A	Neuroglia cells are significantly more, not slightly less, numerous than neurons.
B	Neuroglia cells are significantly, not slightly, more numerous than neurons.
C	Neuroglia cells are significantly more, not less, numerous than neurons.

D	Correct. Neuroglia cells are 5- to 50-fold more numerous than neurons.
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REF: Neural Tissue, page 22

OBJ: 2

19. The spinal cord consists of how many segments?
- 21
 - 22
 - 30
 - 31

ANS: D

	Feedback
A	The spinal cord consists of 31, not 21, segments.
B	The spinal cord consists of 31, not 22, segments.
C	The spinal cord consists of 31, not 30, segments.
D	Correct. The spinal cord consists of 31 segments.

REF: Neural System, page 29

OBJ: 3

20. Ligaments and tendons are composed of which tissue?
- Neural
 - Muscle
 - Epithelial
 - Connective

ANS: D

	Feedback
A	Ligaments and tendons are made of dense connective, not neural, tissue.
B	Ligaments and tendons are made of dense connective, not muscle, tissue.
C	Ligaments and tendons are made of dense connective, not epithelial, tissue.
D	Correct. Ligaments and tendons are made of dense connective tissue.

REF: Connective Tissue, page 22

OBJ: 2

21. Which of the following is not a type of cartilage?
- Dense
 - Elastic
 - Fibrous
 - Hyaline

ANS: A

	Feedback
A	Correct. There are three types of cartilage—hyaline, elastic, and fibrous.
B	Elastic cartilage can be found in the epiglottis.
C	Fibrous cartilage can be found in the vertebral disks.
D	Hyaline cartilage can be found in the nose.

REF: Cartilage, page 23

OBJ: 2

22. Which organ is part of the lymphatic system?
- Thyroid
 - Thymus
 - Pancreas
 - Parathyroid

ANS: B

	Feedback
A	The thyroid is part of the endocrine, not lymphatic, system.
B	Correct. The lymphoid organs include the thymus, spleen, and lymph nodes.
C	The pancreas is part of the endocrine, not lymphatic, system.
D	The parathyroid is part of the endocrine, not lymphatic, system.

REF: Lymphatic System, page 30 OBJ: 2

23. Which of the following is not a major function of the urinary system?
- Controls blood volume
 - Controls blood pressure
 - Controls testosterone levels
 - Controls urine composition

ANS: C

	Feedback
A	Blood volume control is a major function of the urinary system.
B	Blood pressure control is a major function of the urinary system.
C	Correct. Testosterone levels are controlled by the reproductive system, not the urinary system.
D	Urine composition is a major function of the urinary system.

REF: Urinary System, page 33 OBJ: 3

24. Which function is associated with the skin?
- Excretes waste products
 - Absorbs nutrients from ingested food
 - Supplies a framework for muscle and ligament attachments
 - Relays information from the glands to the central nervous system

ANS: A

	Feedback
A	Correct. A major function of the skin is excretion of waste products (e.g., carbon dioxide, water, salts, urea).
B	Absorption of nutrients is a function of the digestive system.
C	The skeletal system supplies the framework for muscle and ligament attachments.
D	The nervous system relays information from the glands to the central nervous system.

REF: Intagumentary or Skin System, page 28

OBJ: 3

25. Which organ system is the largest?
- Digestive
 - Endocrine
 - Respiratory
 - Integumentary

ANS: D

	Feedback
A	The integumentary (skin) system is larger than the digestive system.
B	The integumentary (skin) system is larger than the endocrine system.
C	The integumentary (skin) system is larger than the respiratory system.
D	Correct. The integumentary (skin) system is the largest organ system in the human body.

REF: Intagumentary or Skin System, page 28

OBJ: 3

TRUE/FALSE

1. Blood provides protection from bacteria.

ANS: T

REF: Blood, page 23

OBJ: 2

2. Bone is calcified connective tissue.

ANS: T

REF: Bone, page 23

OBJ: 2

3. Osteoporosis affects men at an earlier age than women.

ANS: F

REF: Consider the Patient, page 28

OBJ: 2

4. Equilibrium is controlled by tiny organs, which are located in the middle ear.

ANS: F

REF: Special Senses, page 35

OBJ: 3

COMPLETION

1. The three functions of the _____ are to absorb nutrition, dehydrate food, and compress food into solid waste.

ANS: large intestine

REF: Digestive System, page 29

OBJ: 2

2. _____ line the respiratory tract to move foreign particles out of the respiratory system.

ANS: Cilia

REF: Respiratory System, page 29

OBJ: 2

3. _____ return blood to the heart.

ANS: Veins

REF: Vascular System, page 29 OBJ: 2

SHORT ANSWER

1. Identify the four primary types of tissue.

ANS:
Neural, epithelial, connective, muscle

REF: Cells and Tissues, pages 19 - 24 OBJ: 1

2. List the components of the central nervous system.

ANS:
Brain, spinal cord

REF: Neural System, page 29 OBJ: 2

3. Which two layers compose the skin?

ANS:
Epidermis, dermis

REF: Intagumentary or Skin System, page 28 OBJ: 2

4. Which organ system secretes and regulates hormones in the blood?

ANS:
Endocrine system

REF: Endocrine System, page 33 OBJ: 3